

Amendments to the Claims

Please cancel Claims 48-51, 61, 134, 136, 139, 141, 142, 147 and 150-156. Please amend Claims 52, 57, 67, 69, 140, 148 and 149. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1-45. (Canceled)

46. (Original) An isolated nucleic acid comprising the nucleotide sequence SEQ ID NO:5.

47. (Previously presented) An isolated nucleic acid having at least 90% nucleotide sequence identity SEQ ID NO:5, and encoding a polypeptide, wherein said polypeptide has iron transport activity.

48-51. (Canceled)

52. (Currently amended) An isolated nucleic acid which encodes a polypeptide having an iron transport function and is at least 457 amino acid residues long, wherein said nucleic acid hybridizes under high stringency conditions to SEQ ID NO:5 or its complement, and wherein the high stringency conditions are hybridization at 64-65 °C for 16 hours in 6x SSC/10 mM EDTA/0.5% SDS/5x Denhardt's solution/100 µg/ml sheared and denatured salmon sperm DNA, washing two times with 2x SSC/0.5% SDS solution at room temperature for 15 minutes each, and washing two times with 0.2x SSC/0.5% SDS at 65°C, for one hour each.

53. (Canceled)

54. (Previously presented) An isolated nucleic acid comprising a nucleotide sequence encoding a polypeptide having iron transport activity, wherein said nucleotide sequence shares at least 90% sequence identity with the nucleotide sequence SEQ ID NO:5.
55. (Previously presented) An isolated nucleic acid encoding a fusion polypeptide having iron transport activity, said nucleic acid molecule comprising a nucleotide sequence encoding amino acid sequence SEQ ID NO:6, and further comprising a nucleotide sequence encoding a heterologous portion of said fusion polypeptide.
56. (Previously presented) An isolated nucleic acid comprising a nucleotide sequence which encodes a protein comprising the amino acid sequence SEQ ID NO:6.
57. (Currently amended) ~~A~~ An isolated nucleic acid ~~vector comprising nucleic acid~~ having at least 90% nucleotide sequence identity to a nucleic acid encoding a polypeptide comprising the amino acid sequence SEQ ID NO:6, wherein said polypeptide has iron transport activity.
58. (Previously presented) A nucleic acid vector comprising nucleic acid encoding a fusion polypeptide having iron transport activity, said nucleic acid comprising a nucleotide sequence encoding an amino acid sequence SEQ ID NO:6, and further comprising a nucleotide sequence encoding a heterologous portion of said fusion polypeptide.
59. (Previously presented) A nucleic acid vector comprising nucleic acid comprising a nucleotide sequence which encodes a protein comprising the amino acid sequence SEQ ID NO:6.
60. (Previously presented) A nucleic acid vector comprising nucleic acid having at least 90% nucleotide sequence identity to a nucleic acid encoding a polypeptide comprising the amino acid sequence SEQ ID NO:6, wherein the polypeptide has iron transport activity.

61. (Canceled)
62. (Previously presented) A nucleic acid vector comprising a nucleic acid with at least 90% nucleotide sequence identity to the coding region of SEQ ID NO:5, wherein said nucleic acid encodes a polypeptide with iron transport activity.
- 63-64. (Canceled)
65. (Previously presented) A cultured cell comprising the vector of Claim 59.
66. (Canceled)
67. (Currently amended) A cultured cell comprising recombinant nucleic acid having at least 90% nucleotide sequence similarity to a nucleic acid encoding a polypeptide comprising the amino acid sequence SEQ ID NO:6, wherein said polypeptide has iron transport activity.
68. (Canceled)
69. (Currently amended) A cultured cell comprising nucleic acid comprising a nucleotide sequence which encodes a polypeptide having an iron transport function, wherein said nucleic acid hybridizes under high stringency conditions to SEQ ID NO:5 or its complement, and wherein the high stringency conditions are hybridization at 64-65 °C for 16 hours in 6x SSC/10 mM EDTA/0.5% SDS/5x Denhardt's solution/100 µg/ml sheared and denatured salmon sperm DNA, washing two times with 2x SSC/0.5% SDS solution at room temperature for 15 minutes each, and washing two times with 0.2x SSC/0.5% SDS at 65°C, for one hour each.

70. (Original) A method for producing a polypeptide, said method comprising culturing the cell of Claim 67 under conditions in which the cell produces the polypeptide.
71. (Original) A method for producing a polypeptide, said method comprising culturing the cell of Claim 67 under conditions in which the cell produces the polypeptide, and isolating the polypeptide from the cell or the culture medium.
72. (Original) An isolated nucleic acid comprising the nucleotide sequence SEQ ID NO:7.
- 73-134. (Canceled)
135. (Previously presented) An isolated nucleic acid comprising a contiguous portion of SEQ ID NO:7 or its complement, wherein the nucleic acid is 15 to 30 nucleotides.
- 136-137. (Canceled)
138. (Previously presented) An isolated nucleic acid comprising a contiguous portion of SEQ ID NO:5 or its complement, wherein the nucleic acid is 15 to 30 nucleotides.
139. (Canceled)
140. (Currently amended) An isolated nucleic acid comprising a nucleotide sequence that encodes ~~Ferroportin1 (SEQ ID NO:6)~~ a protein having amino acid sequence SEQ ID NO:6.
- 141-142. (Canceled)
143. (Previously presented) An isolated nucleic acid comprising the complement of nucleotide sequence SEQ ID NO:5.

144. (Previously presented) An isolated nucleic acid that hybridizes under high stringency conditions to a nucleic acid comprising the nucleotide sequence SEQ ID NO:5 or its complement, wherein the high stringency conditions are hybridization at 64-65 °C for 16 hours in 6x SSC/10 mM EDTA/0.5% SDS/5x Denhardt's solution/100 µg/ml sheared and denatured salmon sperm DNA, washing two times with 2x SSC/0.5% SDS solution at room temperature for 15 minutes each, and washing two times with 0.2x SSC/0.5% SDS at 65°C, for one hour each.
145. (Previously presented) An isolated nucleic acid comprising the complement of nucleotide sequence SEQ ID NO:7.
146. (Previously presented) An isolated nucleic acid that hybridizes under high stringency conditions to a nucleic acid comprising the nucleotide sequence SEQ ID NO:7 or its complement, wherein the high stringency conditions are hybridization at 64-65 °C for 16 hours in 6x SSC/10 mM EDTA/0.5% SDS/5x Denhardt's solution/100 µg/ml sheared and denatured salmon sperm DNA, washing two times with 2x SSC/0.5% SDS solution at room temperature for 15 minutes each, and washing two times with 0.2x SSC/0.5% SDS at 65°C, for one hour each.
147. (Canceled)
148. (Currently amended) A method for detecting a variant allele of a human *ferroportin1* gene, comprising obtaining *ferroportin1* DNA from a reference sample and *ferroportin1* DNA from a test sample to be compared to the reference as having a variant allele, and determining whether the reference DNA and test DNA differ differs in DNA sequence in the *ferroportin1* gene from SEQ ID NO:7, wherein, if the test DNA differs in sequence from the reference DNA SEQ ID NO:7, the test DNA comprises a variant allele of a human *ferroportin1* gene.

149. (Currently amended) The method of Claim 148 wherein ~~the DNA from the reference sample and the DNA from the test sample are~~ is amplified prior to determining ~~their~~ its DNA ~~sequences~~ sequence.

150-156. (Canceled)